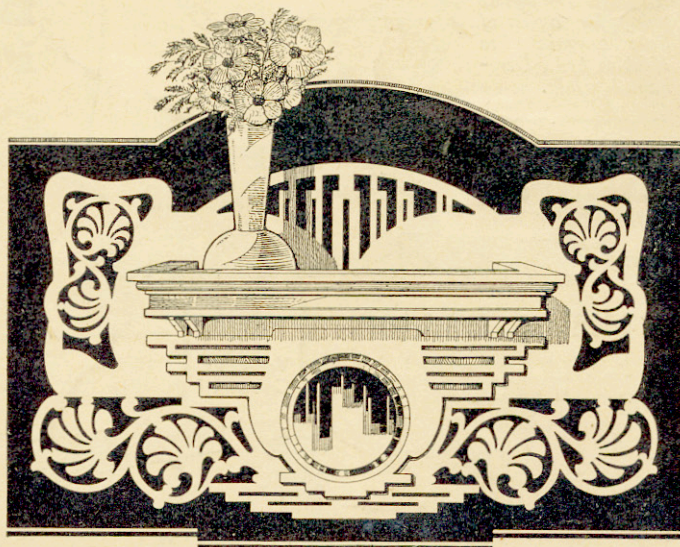


# Hobbies

## WEEKLY

Free design chart

### BALCONY WALL BRACKET



Woodwork

Model Aircraft

Electricity

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March 12th. 1938

2<sup>D</sup>

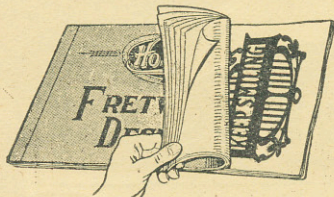
Vol. 85. No. 2212

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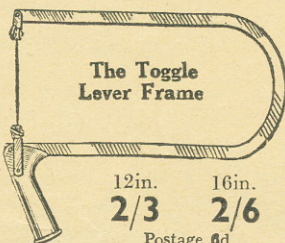
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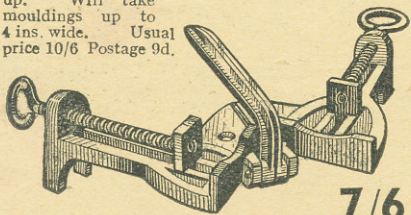
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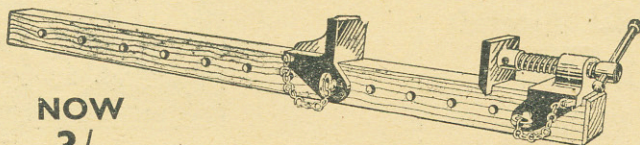
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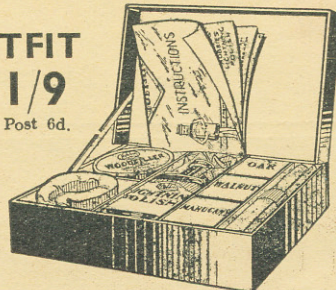
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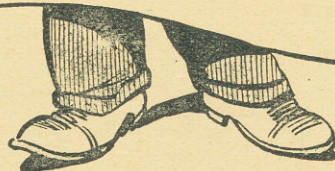
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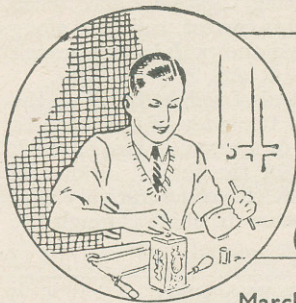
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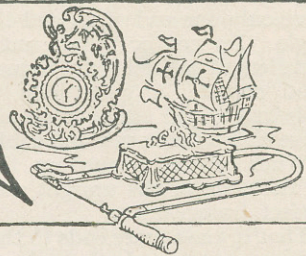
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# Hobbies

## WEEKLY



March 12th. 1938

Vol. 85. No. 2212

## BALCONY BRACKET

THE reader will realise as soon as he looks at the picture herewith, that the type of work shown and provided by the patterns on this week's design sheet is quite different from the usual run of patterns we have here.

The narrow balcony shelf is provided with a front edging and a capping piece, and is supported by two small fancy brackets at each end. Thus, any vase stood on it is perfectly safe from falling off, whilst the shelf itself is ornamented with a moulded front and ends.

A detail of the construction of this particular part is shown herewith, and the building is quite straightforward from these details. The main back is further decorated with a circular mirror which is held in place by an ornamental overlay.

### Size and Wood

The overall size of the back is 15ins. long and 8½ins. wide, and this should be the first piece cut out. It is in 3/16in. wood and has frets round its outer edge. In the centre of it is shown the opening A which is the mortise for the back of the shelf to be fixed later.

Notice, too, the dotted lines representing the positions of the four little upright brackets at B. These should be marked through the design paper on to the wood by making a definite pin hole. Thus the position of the brackets is apparent when the paper remains have been cleaned away.

The fretwork portions of the main back having been cut, you can get out the circle for the mirror, then finally the outline of the whole thing. It is a good plan to lay the mirror in place and mark round it in pencil to ensure the aperture in the back is large enough to take it comfortably.

It may be that you are going to use the circular piece of waste wood which comes out of the back as a piece to hold the glass in position later. If so, remember to put the drill hole actually on the cutting line, and take great care to keep the saw-blade to the mark of the circle.

### Mirror and Overlay

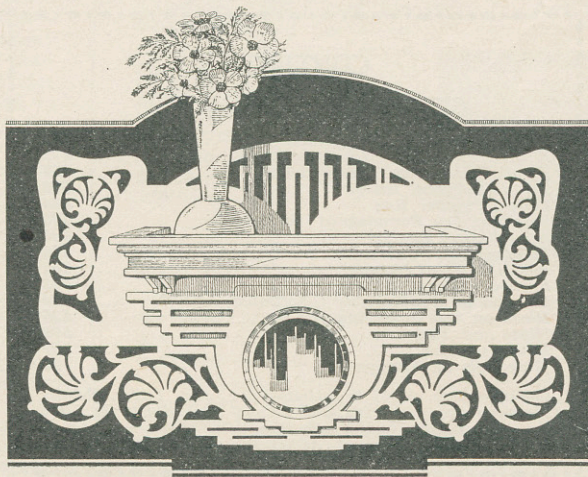
This is essential because if the circle is not perfectly round you may get it into place, but it will probably fit tight and stick. Of course, there is no need actually to use this piece of wood if you can fill the aperture out with cardboard, then put a piece of fairly stiff brown paper over the whole of it.

The mirror is held in front by the overlay, and this can be cut and glued in place. Notice that the opening round the mirror is chamfered to get a thin edge nearest the glass.

This is done with a small half-round file, the wood being laid on the fretwork cutting table. In this way, the file can be used through the V-opening of the table, and so reduce the likelihood of damage or breakage.

The overlay must be weighted down to the back, and whilst these two parts are bedding together, we can get on with the construction of the shelf. The parts surrounding its edge can be cut out and tested in place so that when they are all glued together, the whole thing will fit on to the back nicely.

As shown in the detail, the upright parts are three long strips which are stood on edge at the front and two ends. The ends or sides of the balcony go behind the front and all are set back slightly from the edge of the shelf itself as can be seen. Then lying flat along the top edge of these parts is capping piece or edging strips.



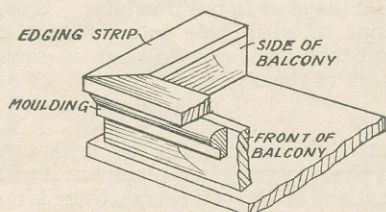


The front piece is cut with an exact mitre of 45 degrees at each end whilst the side edging strips have only one end at 45 and the other as a right-angle. Do not cut these until you have tested their length satisfactorily to make a good fit and a good corner. A good plan to ensure straight ends or straight edges to an angle of 45 is to cut these with a tenon saw and a mitre block.

When cut and cleaned up, the parts should rest on the edge of the upright portions and make a perfect framework.

That is, the square ends to the side pieces should bed against the back, then when the front strip is in place the whole lot should be flush with the actual inside surface of the upright portions. If you think fit, run one or two nails through into the edges.

On the other hand, this should not be necessary because the moulding which is to be put on the underside acts as a further strengthener. This moulding is Hobbies No. 24 and can be seen in the diagram.



A section showing construction of balcony portion

Cut the moulding carefully with tenon saw and mitre block to ensure the angle at the corners is true and snug. Two shorter pieces which come at the ends should bed closely between the front piece and the back.

Glue all the moulding firmly in place in the right-angle provided, then give a light rubbing of glass-paper at the corners to obliterate the actual cut as much as possible.

If you have unfortunately got a gap here, you may be able to fill it with sawdust and glue to tone it down as much as possible. Nothing looks worse than an unsightly joint at a corner, but in this instance we can overcome it slightly by carefully glass-papering and gluing with sawdust.

Remember in gluing up the end pieces, that they do not extend over the back edge of the wood, because if they do you will not get the surface to bed itself down on to the back. At the same time, do not get the parts too short or you will then have a gap between them and the back itself.

Test all these little

parts before finally putting together, and when you are satisfied that all is correct, run glue along the back edge of the shelf and push home through the mortise and tenon at A.

There is not a great deal of weight likely on the shelf, but if there is any tendency of the wood to twist at all, run a knife or a screw or two through the back into the edge of the shelf. Be careful in doing this not to split the comparatively thin material, or allow the screw to show through the surface.

#### MATERIALS REQUIRED

*Fretwood*—For making this design we supply a parcel of oak with sufficient No. 24 Moulding, 2/-, post free 2/6.  
*Fittings*.—Bevelled mirror, No. 5712, 7d., post free 9d.  
A complete parcel, wood and mirror, sent post paid, for only 3/-.

Bore a hole before doing this, and so reduce that likelihood.

The wood supplied by Hobbies is in oak through-out, and you can imagine what a strong serviceable piece of work the whole thing will appear when complete. If you wish, the wood can be left in its natural state, but as this is liable to get dirty or dusty, a good plan is to give it a coat of stain and then of polish.

The stain can be applied light or dark according to desire. A good plan is to put on a light coat first, then if you prefer a heavier shade, put on subsequent ones to darken the whole thing down. Do not, however, make the wood too black or too brown, because if you do it will take out the striking grain which is found in Hobbies wood.

One point to remember is to take off any excrescences of glue before you commence staining. That is why we always recommend wiping the glue away immediately it squeezes out between any parts.

If it is allowed to get hardened it can be chipped away with a knife or chisel, but some of its body has passed into the surface of the wood, and you will find it difficult to get the stain to take at that particular point. If, therefore, you have had glue squeeze out on to the surface, rub this down before applying the stain.

The same remarks apply to the corners of the

moulding, or to the edging strips where any extra glue which may be seen must be cut away before staining.

The bracket can be hung by means of the frets at the back or if you wish for a more safe job, add a couple of wall hooks—one at each end. Screw these on behind so the projecting part of the hanger can be used for nailing. The hangers are obtainable from Hobbies Ltd., Dereham, Norfolk.

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# A BIRD TABLE

**R**EADERS fond of birds may like to make a bird table, on which the birds can feed in comfort and safety. Such a table as the design illustrated can be easily constructed, and when finished is a pleasing finish to the garden.

The post should be a substantial one, say 4ins. sq. and is buried in the ground a depth proportional to its height, a post say 6ft. long being buried 2ft. deep and a 11ft. post at least 3ft.

The table is fixed 13ins. from the top of the post and is made up of T and G boards to 18ins. sq. At opposite sides screw underneath a batten to hold the boards and prevent warping, and cut out a square hole in the centre to admit the post.

## The Table

For a short table, a convenient height from the ground level to fix it would be 3ft. to 4ft. At this height screw across two inner battens, as at B in Fig. 2, drop the table over and nail to these battens, or screw if a stronger job is desired.

To make the canopied roof, a valuable addition as it keeps both table and food dry, copy the dimensions in Figs. 1 and 2.

First prepare the gable ends by sawing off two lengths of 1in. by 4in. board. Strike a line across the centre of each and from the top of this line bevel off to the bottom opposite corners. This gives the slope of the roof.

## Ridge Bars

These are connected by a cross bar, A, also bevelled off each side to conform to the slope of the gable end pieces. Bar A is prepared from a piece of 1in. by 3in. stuff. Nail all together.

Lay A across the top of the post and bevel off the sharp corner angles of the post to correspond with the slope of A. The boards for the roof can be cut from T and G matchboarding.

Let them overlap the gables by  $\frac{1}{2}$ in. and nail to them and crosspiece A. The canopy can then be fixed to the top of

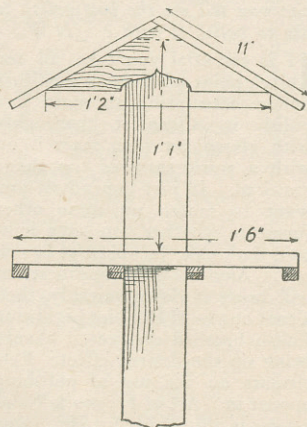


Fig. 1—A side view with dimensions

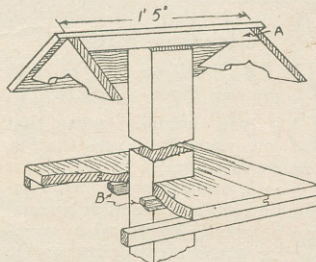
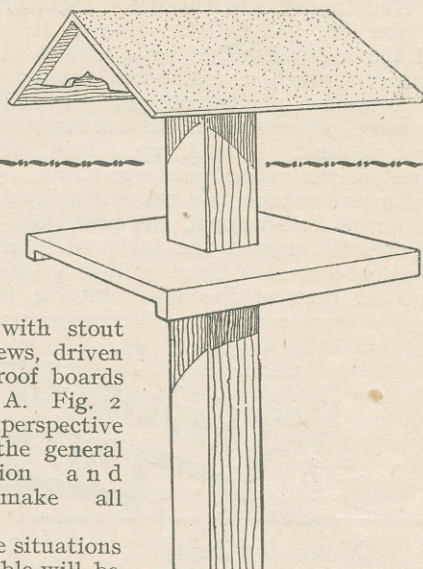


Fig. 2—Construction of roof and table



the post with stout brass screws, driven through roof boards and bar A. Fig. 2 shows a perspective view of the general construction and should make all plain.

In some situations a taller table will be desirable, particularly where prowling cats are to be feared. In such cases the post should be long enough for the level of the table from the ground to be 5ft. to 8ft.

Where the height is such that to replenish the food supply, or clean the table top, means a lot of most uncomfortable stretching, or perhaps the need of a chair or steps to stand upon, the table can be made to lower and save such trouble.

## A Fixing Sleeve

This is quite easily arranged, and is explained in Fig. 3. Here the table, instead of being nailed to inner battens which are themselves fastened to the post, it is nailed instead to a wooden sleeve.

Make the sleeve, of 1in. thick wood, to slide quite easily up and down the post, and let it be long enough to be in comfortable reach of the hand when the table is up.

## CUTTING LIST

	Length	Width	Thickness
Table top ..	1ft. 6ins.	1ft. 6ins.	$\frac{3}{4}$ in.
Outer battens (2) ..	1ft. 6ins.	1in.	1in.
Inner battens (2) ..	9ins.	1in.	1in.
Roof boards (2) ..	1ft. 6ins.	11ins.	$\frac{3}{4}$ in.
Gable ends (2) ..	1ft. 2ins.	4ins.	1in.
Bar A ..	1ft. 3ins.	3ins.	1in.
Post from 6ft. to 12ft. of 4in. sq. stuff.			

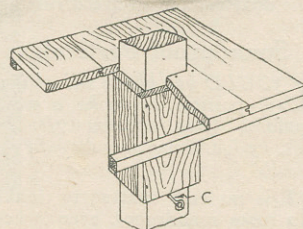


Fig. 3—The sleeve and pin for holding the table



Nail the parts of the sleeve together, or screw if you like, and nail the table to it. It is kept at the required height by a pin, as at C, which passes through a hole bored through the post.

A wooden pin is not quite the thing for the purpose on account of its tendency to swell in wet weather. Instead, use a steel one—a metal meat skewer makes quite a good pin.

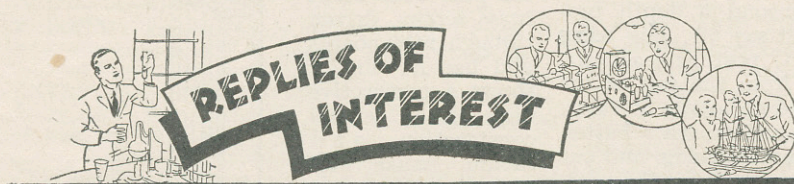
Lower the table to a convenient level then bore a second hole through the post, just below the sleeve, to support the table while the food is being prepared, or cleaning in progress.

That part of the post entering the ground

should be well creosoted, and the remainder, including table and roof, given a priming coat and two of white or green paint. Ram the earth well round the post to fix it firmly, a few small stones mixed with the earth will help in this direction.

A really better method, if the extra trouble is not minded, is to make a wooden socket for the post, like that for a clothes post. This is well creosoted and buried level with the ground. It is rammed round with earth and stones or, what is much preferable, a concrete mixture.

A final point, use a plumb line when setting the post, to get it vertical.



Some answers to letters from readers, which are of general interest to all.

### Motor for Boat

**I** WANT to build a boat to be driven either by a motor cycle or a small motor car engine, to be used only, of course, in sheltered water. Please let me know details of construction of such a craft, with the kind of wood most suitable. I only want it to be big enough for two or three persons—(H.K.)

**T**HERE is no great difficulty in building a small boat for driving by a motor car or motor cycle engine, something on straight-forward lines about 16ft. long should be suitable. Detailed drawings for such a boat can be had from E. W. Hobbs, A.I.N.A. 2 Elm Park Court, Pinner, Middx. The best woods to use are oak for keel and frames, cedar or spruce for planking, etc., mahogany for coamings. An engine of anything from about 2½ to 7 h.p. would be suitable, one with magneto ignition is best for hand starting; an "Austin 7" engine with self-starter and dynamo is very nice—it is compact, water cooled and the dynamo can charge the battery for side and head lights and general service. Galvanized or copper fasteners (nails, screws, etc.) should be used throughout the construction to avoid rusting.

### Soundproof Particulars

**C**OULD you please tell me if it is possible to make a wood building (size approx. 7ft. by 6ft. by 6ft. 6ins.) soundproof?—(G.F.)

**I**T is no easy matter to make a room soundproof, even when specially constructed from the outset. In your case, the sound can be considerably deadened in

the following way. As a wood building, it is presumed that the walls are of matchboarding, nailed to framing. You do not say if the building is lined, but in any case the interior should be covered from floor to roof with soundproof quilting or thick felt. This should be tacked either to the walls or framing. On this, nail lin. sq. battens at convenient intervals, and to the battens nail the interior lining of wallboard. The ceiling is constructed similarly. As there is usually a window, the felt and lining should be nailed to the window framing and a second window fixed to this, so that a space is left between the two windows. The door is dealt with in the same manner, though a framed inner door is not necessary; one built of wallboard, covered on the outside with quilting being sufficient. Cover the floor with felt and lay thick cork linoleum on top. This arrangement should be fairly satisfactory. If extra expense is not objected to, the space between the felt and outer walls can be filled with a sound-deadening material, well-dried grass or cork dust will do. The necessary materials can be bought from or through a local builders merchant.

### Cleaning Films

**P**LEASE tell me how to clean my own films.—(B.G.R.)

**D**O you actually mean that you want to clean—that is, remove dirt from them? If this is the case, marked and soiled gelatine film (either camera or cinema) can be greatly improved by soaking for a short time in water to which a very small amount of hydrochloric acid has been added,

the proportions being water about 10oz. acid 2½ drachms, a chemist would make this up for 2d., after which they should be washed in clean water and hung up to dry.

### Step-Dancing Mat

**W**ILL you tell me how to make a wooden dancing mat for step dancing?—(L.W.)

**A** WOODEN mat for step dancing should be about 2ft. 6ins. long and 2ft. wide. It is built up of slats to which two strips of strong canvas are glued and tacked. The slats should preferably be made of straight grained ash or oak about 1½ins. wide and ¾in. thick. These are fixed on to the canvas about ½in. apart so the mat can be rolled up when not in use.

### Repolishing Oak

**I** HAVE a piece of old oak furniture which has been covered with some black paint. I have got all the paint off and now can you tell me the best polish to use to polish it with? (N.W.)

**I**T is essential you take all the black paint off the oak furniture before attempting to stain and polish it. Clean it thoroughly with glasspaper then stain it up with a spirit stain of the shade required. It just depends if you want to match up some other furniture whether you have light oak, dark oak, Jacobean or brown oak. Any of these spirit stains will bring it down suitably, then a coat or two of Hobbies Lightning Polish brushed on over it should bring up the desired effect. Particulars on the use of polishing appear in "Art of Fretwork" and a copy is obtainable for 7½d., post free.



# The AMATEUR ELECTRICIAN

## SMALL COMMUTATOR CONSTRUCTION

**M**ANY amateur craftsmen find the building up of small commutators, required in the construction of fractional horse-power dynamos and motors, a very troublesome process, not only on account of the accurate nature of the mechanical work involved but due also to the exacting nature of the electrical requirements of the job.

The commutator considered as a structure composed of a large number of component parts, each highly insulated from one another, mechanically strong enough to resist distortion at high speeds and extreme variations in temperature, is indeed an item calling for a good deal of care in design and skill in the making.

### Primitive Types

The days have long since vanished when we were instructed in our text books how to take a piece of brass tube, drive it on to a hard wood centre, mark off the segments, and then drill holes in each one radially to take short metal pins or screws, just short enough to miss touching the shaft when passed through its centre (Fig. 1).

If these primitive commutators did not fly to pieces during their first run it was regarded as a great triumph. And how many of them could be relied upon to keep their shape for any length of time especially if working long enough to acquire a temperature?

When vulcanized fibre first came into use and was substituted for the hard wood hub it improved matters certainly, but even fibre is liable to split and alter its shape considerably under varying conditions of moisture and heat.

### Simple Two and Three-Part Commutators

Those of us who are only interested in commutators as part of toy motors or generators not intended for serious work, may feel averse to putting a lot of expense and care into a commutator built on more orthodox lines, the cost being out of all proportion to the worth of the finished model.

In such cases a very much better and more reliable home-made article results from the method of building indicated in Figs. 2 and 3.

These are intended for use with "H-type" and "Tripolar" armatures respectively, with which the majority of toy machines are built. As will be seen, the brass or copper tube in Fig. 2 after being driven on to a hard fibre hub, is slotted across the ends with two narrow parallel sawcuts, wide enough apart to miss contact with the shaft.

Into these slots thin tinned copper or brass strips are soldered before dividing the tube into two segments. This will hold the segments far

more firmly than radial pins or screws, and there is no risk of splitting the hub; they are also easier to make up.

The same method can be applied to 3-part commutators if they are not too small in diameter (see Fig. 3).

### Disc Type Commutators

When more than two or three segments are required, another simple way to overcome the commutator difficulty is to make it in the form of a disc as in Fig. 4.

A fibre centre disc is first turned on the face leaving a shallow spigot to fit the centre of the metal ring which is to form the segments. A sufficient number of equally spaced holes are then marked off to allow for at least one screw per segment.

Six, eight, or even twelve part commutators can be made in this way, the screws holding them passing through clearing holes in the fibre back and tapped into the metal of the ring, thus making a very sound mechanical job.

At the same time the screw heads themselves serve for attaching the connections from the armature windings instead of, or in addition to, soldering.

### Multi-Segment Commutators

When it comes to providing commutators for high voltages, however, the large number of

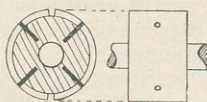


Fig. 1—Example of primitive toy commutators

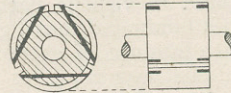


Fig. 3—A 3-part commutator on the same lines as Fig. 2

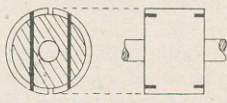


Fig. 2—Improved way of building 2-part commutators

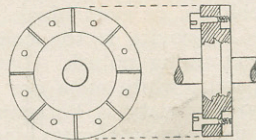


Fig. 4—A disc type commutator

segments needed to minimise sparking troubles, and the necessity for a much more efficient kind of insulation than wood or fibre, necessitates an altogether different method of construction.

Fibre is a fair insulator only when dry, and is always open to the same objection as wood in that it is liable to shrink and warp under the influence of heat, throwing the commutator out of truth.

Many other materials have been experimented with, but most of the really good insulators are



mechanically weak, or those otherwise satisfactory soften with heat. Extraordinarily few substances fill the whole of the requirements. The material most often employed in building multi-segment high-voltage commutators is mica, which possesses considerable strength, can be easily machined, and resists high temperatures.

Its principal objection is that it will not mould to form, or take sharp bends, and can only be used in its natural flat condition unless built up in

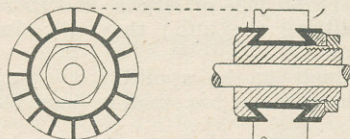


Fig. 5—Standard construction for multi-segment commutators

small flakes and cemented together with some kind of adhesive bond, itself a good insulator.

A modification of mica known as Micanite is to a certain extent useful, as it can be built up in the above method and rolled into sheets of definite thickness. This material can be moulded to shape under heat if sharp angles are avoided but cannot be used for separating individual segments, only for insulating the hub and end rings. If it comes under the track of the brushes the bonding medium may ooze out when hot and get on to the brush faces with disastrous effects.

The object in building a good commutator is to design it so each segment is practically "floating in mica," being separated by this material both from its neighbours, from the metal sleeve on which it is mounted, and from the clamping rings which lock all the segments firmly together.

### Mica as an Insulator

Mica is an interesting substance and but few people seem to be acquainted with its origin. It is a natural mineral, known chemically as anhydrous silicate of calcium and aluminium. Deposits are found in various parts of the world crystallised in a laminated mass, generally capable of cleaving into laminae of extraordinary thinness.

The best mica for electrical work comes from India and is known popularly as "amber" mica. There are many varieties however, the clear transparent kind being the best known. It is also found dark green and brown, streaked with colours, or even black.

Muscovite is the common soft white variety, containing potash. Large pieces of clear transparent white mica are comparatively rare. The soda variety is Paragonite. Biotite or magnesia mica is known by its blackish or dark green colour. Phlogopite is usually bronze coloured and found in serpentine and limestone rocks. Lepidomelane is a black mica taking its colour from iron salts, and for this reason is unsuitable for high voltage insulation.

The rose red and lilac coloured variety is called Lepidolite and is found in association with lithia.

### Commutator Design

The conventional multi-segment commutator is usually built up in the manner shown by the sectional drawing in Fig. 5. The first essential

in the way of material is a sufficient length of special hard-drawn copper strip, formed to the correct taper section, so when the whole number of segments has been cut off and assembled in a ring they fit quite closely together, without any gaps showing either at the outside or the inside diameters.

In ordering the metal the angle should be specified which the two taper sides make with one another, the radial depth of copper required in the segments, and the exact width at top and bottom of each segment.

The angle of taper is easily determined by dividing the number of degrees in a circle by the number of segments required in the commutator. Thus a 24-part commutator will have segments tapering  $360 \div 24 = 15$  deg., a 30-part commutator  $360 \div 30 = 12$  deg. taper for the segments, and so on.

This holds good whatever may be its overall dimensions, since the taper will always remain the same whatever the diameter. In calculating the finished inside and outside diameters allowance has to be made for the thickness of mica inserted between the segments.

### Diameters

Although it is easy enough to specify the diameters inside and out before the mica separators are inserted, the effect when these are in place is to expand the diameters to an extent depending on the number of mica inserts, and their individual thickness.

The standard thickness adopted for inter-segment insulation for ordinary commercial voltages is thirty thousandths of an inch (0.030") and from this the difference between the commutator dimensions first with the bare copper segments assembled together and secondly with the mica separators inserted is ascertained by adding the product of the number of separators multiplied by their thickness to the figure representing the circumference of the bare metal assembly and dividing by " $\pi$ " (3.1416).

A 24-part commutator, for instance, contains 24 pieces of mica 0.030 in. thick or a total thickness of 0.72 inches.

If the commutator is 1½ in. outside diameter over the bare copper assembly, that is  $\pi$  by 1.5 in. or 4.7 in circumference, its perimeter will be increased to  $4.7 + 0.72 = 5.42$  in. when the insulation is inserted. Its outside diameter will then be  $5.42 \div \pi = 1.726$  in. diameter when completed. Inside diameters can be calculated in exactly the same way.

### Mechanical Requirements

From the drawing in Fig. 5 it will be clear that the segments are secured from displacement by centrifugal force by the pressure exerted on the coned recesses at the ends, which draws them down on to the mica collar over the metal sleeve. On screwing up the end nut the whole structure is thus forced inwards by the cones, and beds firmly on the sleeve.

(To be Continued)



# A PORTABLE RABBIT HUTCH

THE hutch shown in the accompanying drawing is of a very useful form, since in good weather the house can be moved about from place to place giving the pets fresh ground, and by using a wire floor they can nibble and eat the clover and grass while in captivity. In winter time the wood floor is substituted, making hutch comfortable for cold weather.

A sketch of the completed house is shown at Fig. 1 in which the living space is built in box form while the run has a wire front hinged on the bottom edge for cleaning purposes. Both the floors in the apartment are movable, which is a great advantage in cleaning out the house.

The house as shown at Fig. 2 and Fig. 3 has matchboard ends, these are cut to the shape of the drawing at Fig. 3. A good plan in making those three pieces up is to knock sufficient boards together to make up the breadth 2ft. 3ins. and then plane up the edges to the exact size.

## Top and Bottom

With the boards in position, mark off the bottom end and the line for the sloping roof, cut these boards to the exact length and nail on the top and bottom cross pieces, these pieces are 2ins. by  $\frac{3}{4}$ in. and the bottom ones are 2ft.  $1\frac{1}{2}$ ins. long that is  $\frac{3}{4}$ in. short of the front and back edges of the ends.

The top bars are cut to a slight angle on both

ends, since they lie along the sloping edge of the top and are about 2ft. 2½ins. long, nail all these pieces firmly to the matchboarding and make two of them in pairs for the reason that it is best to have ends of the hutch with the cross pieces inside.

## Rails

The rails which form the front and back are 3ins. by  $\frac{3}{4}$ in. and are checked into the match-board ends and division and that is the reason why the cross pieces nailed on them are kept  $\frac{3}{4}$ in. short, complete the notches on the ends and division for the rail which should be 3ins. down and 3in. in.

The longitudinal rails on the top are 7ft. 6ins. long, while those at bottom 8ft. 6ins. the long one form the handles, which project 6ins.

Make the handle grips at the ends 6 ins. long and shape those in as shown at Fig. 2, this may be done with the bow saw and rounded off with the spokeshave.

### Entrance Hole

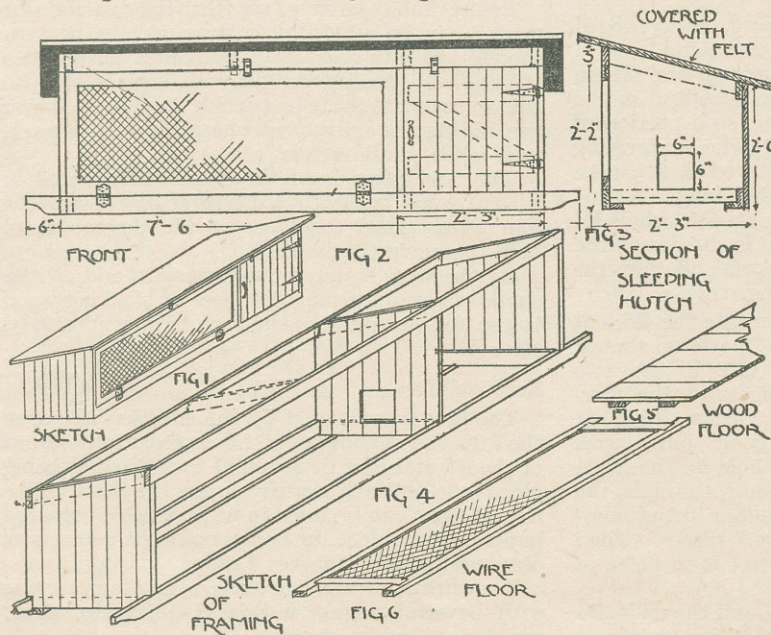
Before nailing the frame together, cut out the access hole between the two apartments. This is about 6ins. square and depends somewhat on the size of the animals it is intended to keep but 6ins. by 6ins. is a good average opening.

Nail the framing together as shown at Fig. 4, then add the two runners which are to support the floor which are 7ft. 6ins. by 3ins. by  $\frac{3}{4}$ in. If the roof boards are to be laid from end to end, fix in a small spar as shown by the dotted lines at Fig. 4 but this may be done without when the boarding is nailed from front to back.

In either case give the roof boarding 3 ins. of projection on sides and ends, then cover the boarding with tarred felt turned down over the edges and well tacked.

## The Floor

The portable wood floor for each apartment is made up as shown at Fig. 5 and the wire floor as Fig. 6. The wire floor is made up with a frame from 2in. by 1½in. material, the cross pieces are





notched into the front and back for a distance of  $\frac{1}{2}$  in. and then nailed through the edges. The floor is covered with 1 in. poultry netting.

In making the run door use 2 in. by 1 $\frac{1}{4}$  in. framing and mortise and tenon the joints, using a rebated tenon so as to strengthen the corners, of course a half checked frame would answer the purpose just as well but the joints would require to be well screwed together.

#### Wire and Hinges

Cover with 1 in. poultry mesh wire using  $\frac{3}{4}$  in. staples to fasten the netting on the frame.

The hinging could be done with edge hinges but a much stronger way is to hinge with back fold hinges screwed on to the door and rail as shown

at Fig. 2. Fasten the door with a turn buckle.

To make up the wood door, use  $\frac{1}{2}$  in. or  $\frac{3}{8}$  in. match boarding with 2 in. by  $\frac{3}{4}$  in. ledges and a 2 in. brace the ledges and brace is nailed to the match boarding. After fitting the door, hinge with double tail hinges. One tail is screwed to the door and the other is set round the edge to the end of the hutch.

Remember and keep the knuckle of the hinge in line with the joints in that position it works. Fasten with a turn buckle. Then add a small handle so that the door can be easily manipulated.

Two coats of paint to all exposed woodwork makes the house appear finished and more resisting to weather both sun and rain.

## LADY'S POWDER BOX

**Q**UITE a novel little dressing table box, suitable for any lady's powder outfit can be made from the designs in the centre pages of this issue. Why not do it now, and have it ready for a lady friend to whom it would be most acceptable?

The cost is small, and only a few odd pieces of fretwood are required.

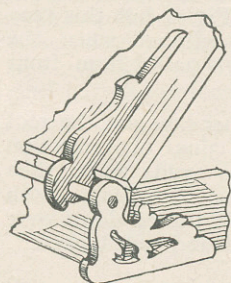
Before starting, have a look at the designs and the picture herewith so you can get a good idea how the whole thing is made up. Cut the lid and a base, then between the two fit the box framework of the two sides, the front and the back. The sides go between the front and the back, and the whole thing is set on the base about  $\frac{1}{4}$  in. from the front and side edges.

#### The Lid Fitting

The lid actually is a separate part, and is hinged by an ingenious pivot arrangement made of a piece of dowel fitted through support parts. These two lid supports are glued to the base and to the sides as shown by the dotted line, so a portion of the support projects at the back. The bar forming

the pivot rod is a  $\frac{3}{16}$  in. dowel 4 $\frac{1}{2}$  ins. long. A good plan to fit the whole lid in place is to leave the lid supports off for the time being.

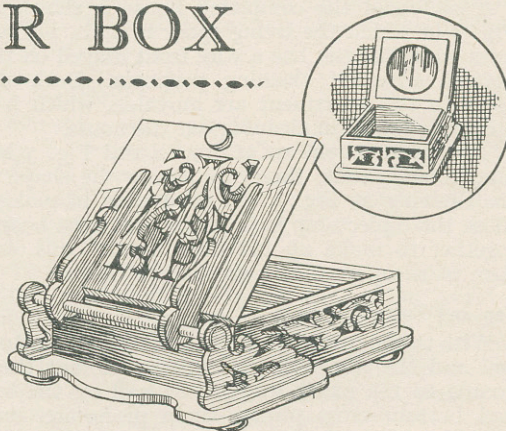
To complete the lid, cut out the pattern shown, then fit into it the two hinged pieces at the mortise and tenon joint A. Get a good joint with the little hole for the single bar passing through the



Detail of lid hinging

hole cut. See that the spindle bar turns comparatively easily in these hinged pieces. Then put the pivot rod through and test it in place in the lid support parts.

It should make a tight fit here, and the ends are covered up with two little covered discs cut from



Patterns on Centre Pages

$\frac{1}{16}$  in. wood. Glue the lid supports to the sides as previously mentioned.

Before finally fitting on the lid, an interior mirror can be added by cutting out the pattern shown. In any case, even without a mirror it is advisable to line up the lid with a piece of 3 $\frac{1}{2}$  in. square material to fit just inside the box. If you are adding the mirror cut one piece with a circle in it 2 $\frac{3}{8}$  ins. in diameter.

The next piece is of the same outline, and in  $\frac{1}{16}$  in. wood but with a diameter of 1 $\frac{1}{8}$  ins. The two pieces glued together provide the rebate to hold the mirror in place.

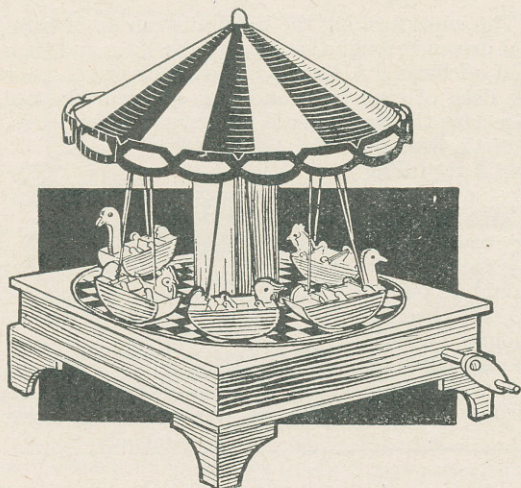
By the way, it may be necessary to add a little shaped fillet of a triangular piece of blocking wood to the bottom corner of the back to give additional strength.

#### Knob and Toes

The box is completed by the addition of one of the little fancy knobs of Hobbies, fixed to the front of the lid and four little round toes (No. 19) being glued one in each corner under the base. The fretted sides can be lined in with suitable coloured paper or linen cloth, or even wood veneer sheets as obtainable from Hobbies Ltd.

The mirror, by the way, is a 2 $\frac{3}{8}$  in. diameter one with bevelled edges, and is Hobbies No. 5711, which costs 7d. post free.





**W**E are giving this week the concluding instructions and details for making the Toy Roundabout, the first part of which was fully dealt with in our last week's issue.

The base and the moving parts having been finished, the next parts to make will be the roof with canopy and valance.

Those workers who desire to make a really pleasing job may get from Hobbies a complete pattern of the three parts all printed in colour on stout card ready for just cutting round with scissors and gluing or pinning on.

There is on this sheet a pattern of the canopy showing exactly how to make the cone as shown in the sketch on this page, the shaped valance which nicely finishes off the edging to the wood disc upon which the cone rests; and also a "mat" to lay on the floor beneath the boats, this also is seen in the sketch.

The price of this complete card is 6d., post free 8d.

# WORKING TOY ROUNDABOUT

(Part 2)

In dealing with the roof section, the first piece to mark out and cut will be the large circular disc N in Fig. 1. This should be cut from  $\frac{3}{16}$ in. plywood with a hole made in the centre to tightly fit the upright spindle.

Before this disc is fixed however, six pairs of small brass screw eyes must be put in on the underside to take the wires which support the boats. At a distance of  $\frac{3}{8}$ in. in from the edge of the wooden disc and about an inch apart, screw in six pairs of screw eyes at equal distances round the board.

Then, taking six pieces of wire  $7\frac{1}{2}$ ins. long, bend each of them up so that they push through the screweyes and then hang down at equal lengths each side where a small hook should be made at the ends ready for just hanging on the boats.

## The Boats

These can be made to look highly attractive if nicely cut and painted or enamelled. At Fig. 2 are given the details of the shaped parts which go to make up the boats.

A full size diagram of one side of a boat is given so that all that is necessary to be done is just to trace this off on to a piece of  $\frac{3}{16}$ in. stuff with carbon paper and then cut it round with a fretsaw.

Take care to bore the holes for the wire handrails before doing the cutting however, as otherwise the wood is liable to split.

Clean up this cut side and use it for marking out all the rest of the sides. Now, from wood

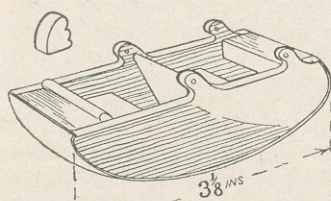


Fig. 4—A boat assembled

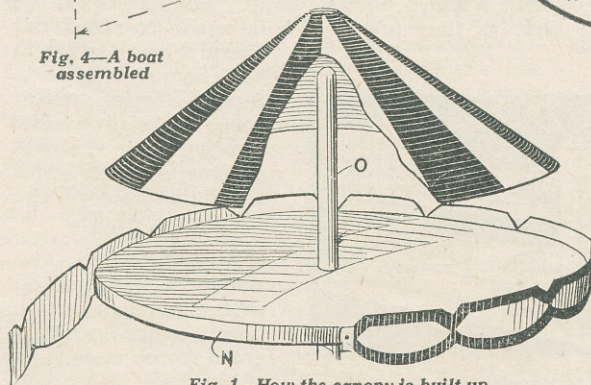


Fig. 1—How the canopy is built up

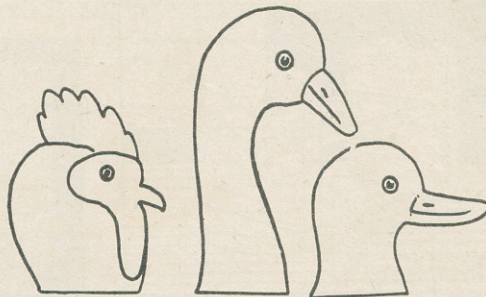
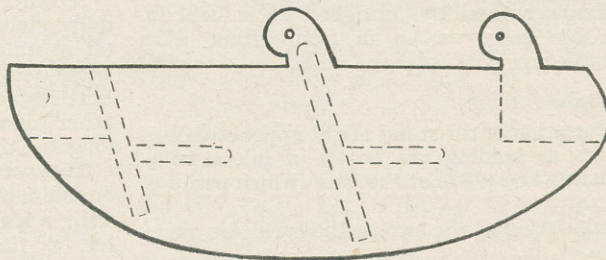


Fig. 2—Full size patterns of boat sides and heads



3/16in. thick and 1in. wide proceed to cut out a number of small pieces to form the seats as shown in Fig. 2, from which can be got the various lengths.

At Fig. 3 is given a section through a seat, with one side removed to show just how the pieces are to be chamfered and glued together, while Fig. 4 shows one seat complete with head and tail piece ready for gluing on.

The three heads in Fig. 2 are given full size so that they can be traced and transferred to the wood direct. Mark round each after cutting out to form two of each head.

The tails are simply formed from small irregular shaped pieces with one flat edge for gluing down to those cross pieces behind the back seat.

The curved bottom of the boats consists of thin plywood bent round the sides and glued down.

The wires forming the handrails can be of brass and driven through the holes in the sides and then filed off flush. A screw eye should be put in near the neck of each bird, and also one near the tail to receive the hooked ends of the suspension wires.

Little need be said regarding the decorating of this fascinating toy beyond the fact that it should be painted in cheerful colours, small tins of enamel at

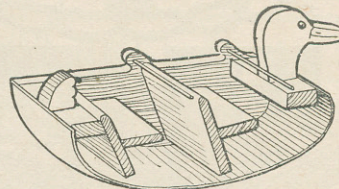


Fig. 3—Construction of the boat

2 1/2d. each being obtainable from Hobbies for this purpose. A full cutting list was given last week.

## VARIATIONS OF AN INKSTAND DESIGN

**R**EADERS who are making the simple inkstand and pen-rack (described in Hobbies Weekly of October 23rd last year) for bazaar-stall sale, will be interested in the three variations of the stand given here. While virtually making different articles they in no way alter the principle of construction.

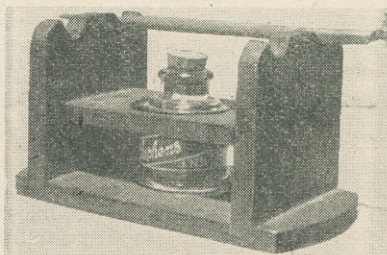
The stand, it will be remembered, was built up of three main parts as indicated in the inset, Fig. 2. A variation may be made, however, by carrying the section (A) from the foot of the side pieces to a position level with the top of the bottle, Fig. 1. This part (A) is not bevelled in this case and it is a trifle narrower than the upright. It is held in position by sprigs driven in from either side through the uprights into the ends.

### Two Methods

This variation of the stand might appeal to some purchasers as holding the bottle of ink a trifle firmer than when (A) is at the base (which perhaps it does).

A combination of the two methods can be made

*The complete stand as suggested*



by having two cross-pieces, one at the base and one at the upper level. The lower one should be bevelled as in the original design and the upper one plain as in Fig. 1.

Still further appeal can be given to this second variation by carving the word "INK" on the side (or sides) of the bevel. Fig. 2 shows the rack finished thus. Or, of course, you can add the letters in transfers.

A third variation is shown in Fig. 3. This is quite elaborate and should bring decidedly more on a stall than the first two variations. Here again two centre pieces are employed and two bottle positions are given, one for black and the other for red ink. The base in this case is 7ins. long by the standard 3ins. wide.

The words "Black" and "Red" are embossed on the bevel under the respective bottle positions with a sharp pointed knife. The letters can be left as they are or can be made to stand out sharply by painting in the channels that go to form the letters, with a touch of bright yellow or other paint that will contrast strongly with the dark stain of the stand as a whole.

All the variations should be finished off with a rectangle of thin green baize securely glued to the undersides of the base.

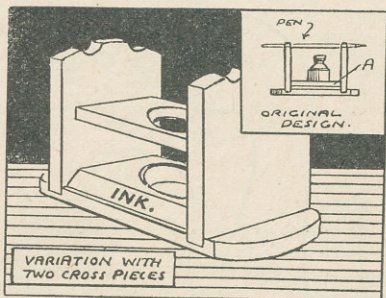


Fig. 2—An upper shelf added

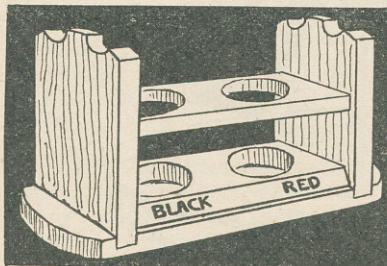
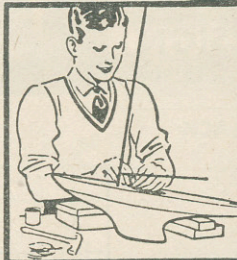


Fig. 3—Made for two inks



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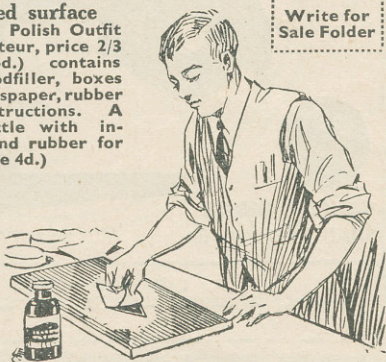
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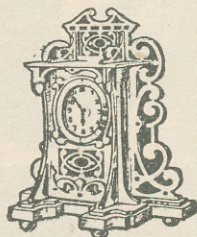
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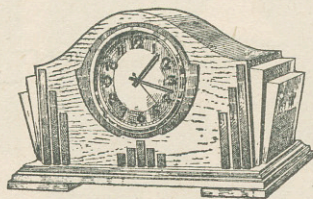
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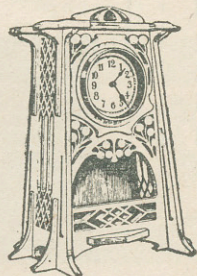


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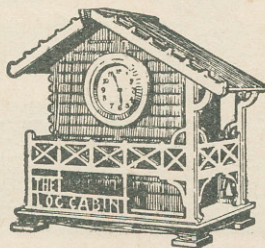


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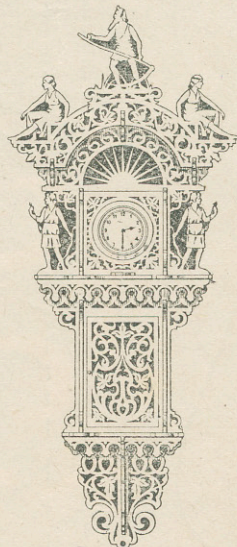
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# LADY'S POWDER BOX AND MIRROR

**For full construction details see page 584**

THE → SHOWS DIRECTION OF GRAIN OF WOOD.

SECTION

# DESIGN

No. S.D. 14

SHAPED FILLET ON BACK  
CUT ONE  $\frac{3}{16}$  IN AND  
SHAPE TO SECTION

**HINGE PIECES**  
CUT ONE OF EACH  $\frac{3}{16}$  IN.

COVER DISCS  
CUT TWO  $\frac{1}{16}$  IN

LID SUPPORT

SIDE

BASE  
CUT ONE.  $\frac{3}{16}$  IN.

 $4\frac{1}{8}$ 

**PIVOT BAR**  
CUT ONE FROM  $\frac{3}{16}$  IN DOWEL ROD

BACK

FRONT

ONE No. 2711 MIRROR  
AND FOUR No. 19 TOES  
REQUIRED.

No.19 TOE

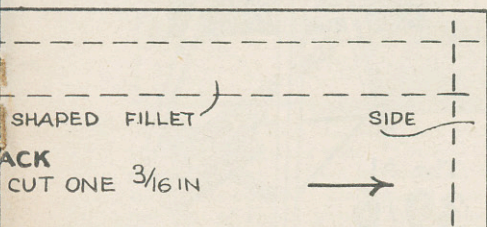
SIDE

## LID SUPPORTS





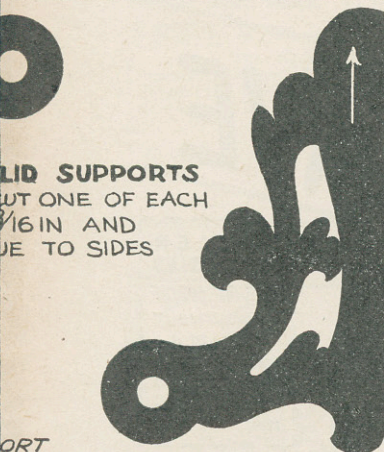
FRONT  
CUT ONE  $\frac{3}{16}$  IN



SHAPED FILLET

SIDE

BACK  
CUT ONE  $\frac{3}{16}$  IN

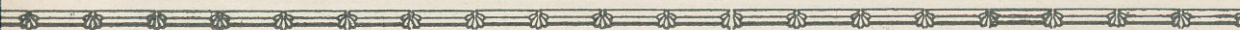
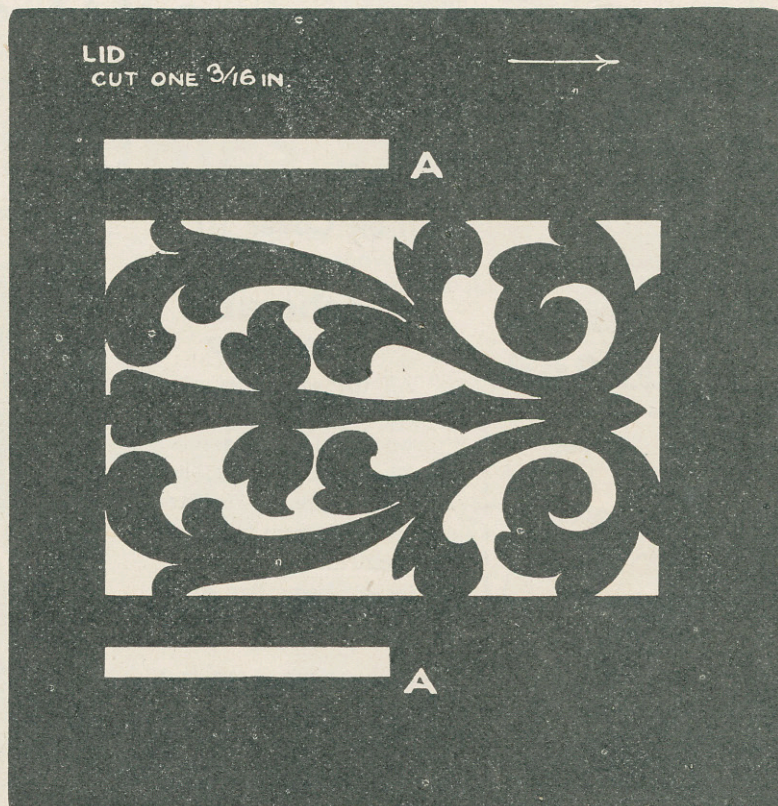
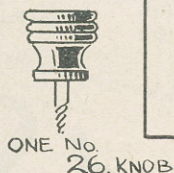
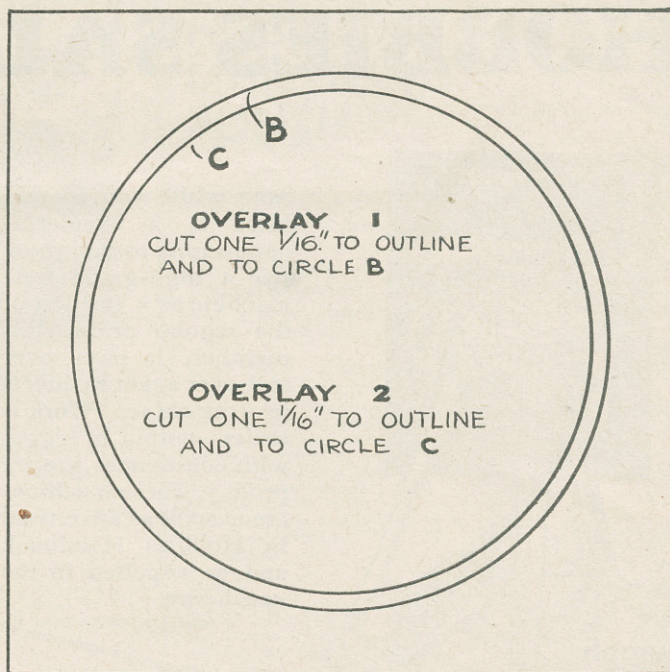


LID SUPPORTS  
CUT ONE OF EACH  
 $\frac{1}{16}$  IN AND  
GLUE TO SIDES

PORT

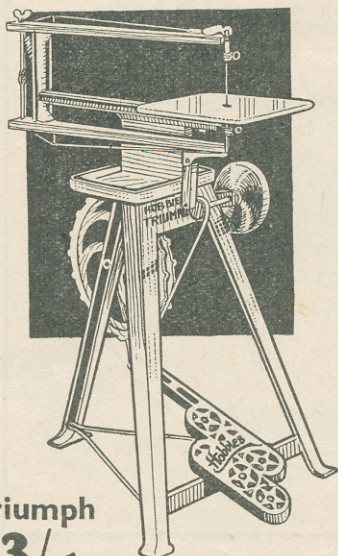


SIDES  
CUT ONE OF EACH  $\frac{3}{16}$  IN



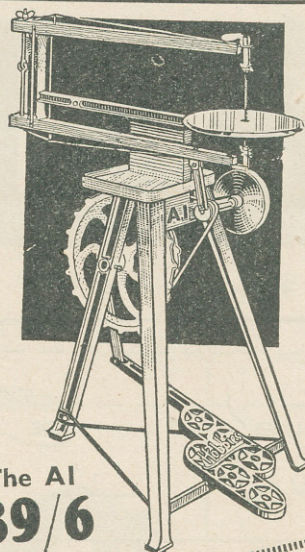


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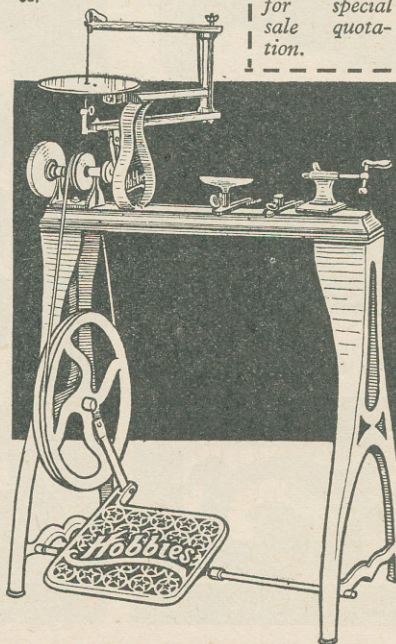


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## NOTES AND NEWS

# MODEL AIRCRAFT TOPICS

### A Simple Form of Wing

**P**ROBABLY more argument has been expended on the subject of what section to employ for the wing, than on almost any other feature of the model, and never yet has opinion failed to vary considerably! What is perhaps of greater significance is the fact that in practice, results also show considerable variation.

While advocates can always be found for almost any section, undoubtedly Clark Y has proved the most popular for light-weight duration models, and the more elaborate RAF32 for the heavier models now stipulated for the Wakefield and other big contests. Both these sections were recently illustrated on this page.

Wind - tunnel tests would possibly indicate each as being theoretically best suited for the model types mentioned.

Nevertheless, excellent results have been obtained not only with general-purpose models, but with duration types, using a nondescript wing-section which has a perfectly flat lower surface, and differs from Clark Y only by virtue of the fact that the leading-edge is not raised.

Why should such a section in certain cases have given as good results as the more scientific sections?

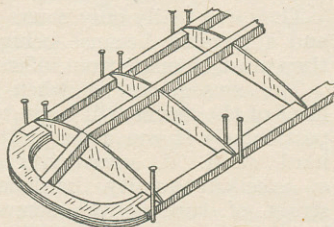
One suggests that the reason is that it is extremely simple to build, and the greater accuracy thereby obtained shows an advantage over an indifferently-built RAF32.

### Building on a Drawing

**W**HAT could be simpler than building the wing on a full-size drawing fastened down to a perfectly flat board? Leading-edge, trailing-edge, and mid-spar (if at the bottom of the ribs) can be fastened down between pins, as shown in our sketch, and the ribs slotted to fit over the spars, and glued down with their lower edge resting on the drawing.

When this type of wing is finished and removed from the board, it can easily be checked for accuracy by inspecting it from the front, and sighting the trailing-edge on the leading-edge. Both must, of course, be parallel.

Any warps caused by over-doping, or by exposure to strong sun or heat, can be detected by



Showing spars between pins and shaped 3-ply balsa wing tip

placing on a flat surface, and can be removed by steaming, and holding down to the flat surface for some hours by drawing-pins placed at intervals along the leading and trailing-edges, not actually piercing the spars, of course.

By the way, the sharp edges of the leading and trailing-spars should be rounded off with medium and then fine glasspaper.

### A Strong Wing-Tip

**A** SIMPLE and strong wing-tip can be made from 3-ply balsa, made by cementing together three pieces of 1/32in. balsa sheet, with the grain running different ways.

When thoroughly dry, cut carefully to shape, including slots for the ends of the spars, which are allowed to project beyond the end ribs, as shown in the sketch. Cement into place, and when dry, glasspaper the outer edge down to a thickness of about 1/16in., and round off.

### Model Popularity

**M**ODEL flying really seems at last to be winning the popularity which so absorbing and instructive a pastime deserves. Clubs are being formed all over the country, and rarely is there a meeting of the Council of the Society of Model Aeronautical Engineers (the body which controls model aeronautics in Great Britain), without applications for affiliation being dealt with.

Among the clubs recently affiliated is one formed amongst the personnel of the Rochester works of Short Brothers, where the magnificent Empire flying-boats, and the Mayo composite or "pick-a-back" plane have been built.

A club is also to be formed amongst the staff of Imperial Airways.

### An Indoor Champion

**T**HIS winter, indoor flying has again taken place at the Royal Albert Hall, London, the models being mostly of the "microfilm" type.

At one of these meetings Mr. Brown, of the Blackheath Model Flying Club, raised the British indoor rise-off-ground 'spar' record to 3 minutes 36 seconds.

For the benefit of new readers, a 'spar' model is one in which a wooden spar, solid or hollow, takes the place of a fuselage, and microfilm is a transparent covering material of extraordinary thinness, formed by pouring a mixture of collodion, amyl acetate and castor oil on the surface of warm water.

The Airman

Look out for Instructions and Blue Print for making a new Flying Model Monoplane





# FRETWORK

Some practical hints  
of interest to every  
user of the fretsaw

**W**E have already mentioned in an earlier article, the matter of the thin screws and nails which are used in fretwork, and it will probably be worth while mentioning to some workers that it is equally necessary to have proportionate tools to use with these.

We have people writing in sometimes saying that the nails bend when they knock them in. When we make further enquiries we find they have used the ordinary large size Warrington type hammer, which is like trying to crack a walnut with a sledge hammer.

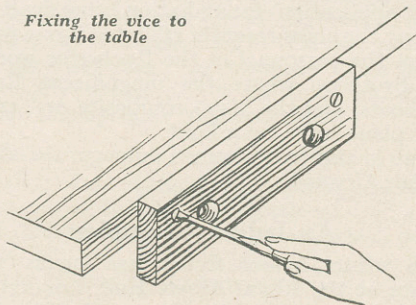
Obviously, the weight of a heavy headed hammer on to the thin shank of a long fret nail is out of all proportion and naturally you must have some comparatively light tool which will drive the nail home without applying too much heavy pressure.

## Hammers to Suit

For this reason, get one of the light hammers supplied and illustrated in *Hobbies Handbook*. They are just the right weight, and the handle is comfortable to use.

Moreover, very often in fretwork you have quite small angles or corners in which to work, and here again a large hammer is quite out of the question, whereas a light one will go right into the corner concerned, and do its job properly.

*Fixing the vice to the table*



The same remark as to the proportionate size of tools applies equally to screws. We have occasionally seen fretworkers holding quite a tiny screw and endeavouring to force it home with one of the fairly large drivers such as you would find in a tool kit or a large carpentry set.

## The Proper Tool

You see how absurd it is when you think of it. The slot in the top of the screw is very thin and quite short. So how can you expect a thick driver to insert itself into the slot and turn the screw as required?

It all helps to wear your patience and try your

temper, and is really absurd when you can obtain the special tools for a few pence. These drivers can be obtained in all sizes so far as length is concerned, and that does not matter a great deal.

What you want is a comparatively small screwdriver, the head of which is quite thin so it can be accommodated into the slot satisfactorily. We are certainly not recommending the purchase of some of those cheap drivers if you are going to undertake much work.

## DRIVERS, VICES AND SHOOTING BOARDS

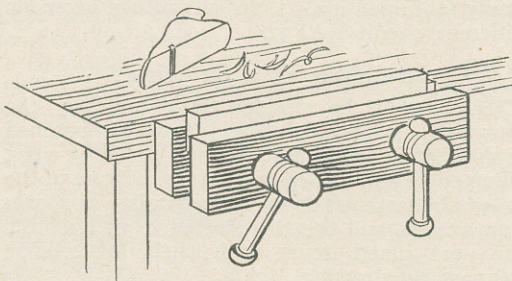
They will really only cause you disappointment and annoyance because being so cheap you see, they must be made from inferior material.

The consequence is, when you use them, the head of the driver will begin to turn at the edges, particularly if you attempt to turn a screw into hard wood. A screwdriver must naturally be of excellent quality, hardened up to take the strain of turning the screw without actually bending the metal of the driver itself.

## Get Reliable Tools

That, by the way, is one of the points which the beginner must work out for himself. It is possible now to buy tools so cheaply that one is apt to run along and obtain a whole carpentry outfit for a shilling or two, then woe betide the worker when he really gets down to it.

His chisels will probably not cut, his screwdriver will turn and bend, his mallet will probably be of such soft wood that it will bend and even



*The bench vice fixed and in use*

split, whilst the hammer head itself will become rounded off and even show nail marks instead of being strong and flat.

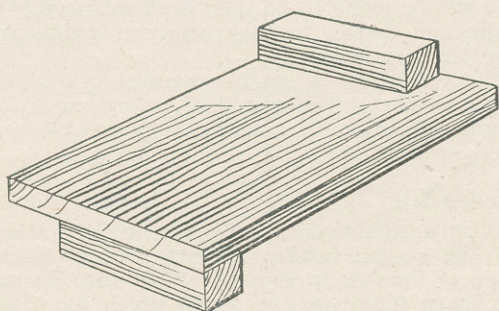
These points may not seem much on paper, but why irritate yourself and probably cause your temper to go astray by the use of cheap inferior tools which do not do their job properly?



Better surely, to have a few good ones upon which you can rely, than a whole host of those which are liable to let you down just at the wrong moment.

Imagine how you will feel, for instance, if you have almost completed a very nice job which you want to finish, say, at the week-end.

The last work of construction is screwing the parts together, then you find late on Saturday night that your screwdriver is turning instead of the screws. You have not another one in the place, and it is impossible to get any further supplies over the week-end.



*A simple and useful sawing board*

What fuming and fretting such a little thing is likely to cause when you have particularly set your heart on completing the thing over the week-end. And all probably because you saved 2d. on a screwdriver in purchasing one which in the end turned out unsatisfactory.

#### **Use of Ratchet Screwdrivers**

Mention of screwdrivers reminds us of the ratchet ones, and we have been asked about them several times by workers. These are quite a sensible and serviceable tool.

By manipulation of a knurled nut you can turn a screw in or withdraw it without actually altering the handle of the driver in the hand. In the ordinary way, of course, you have to release the screwdriver after each turn in order to take hold of it again ready for the next.

With the ratchet driver a locking mechanism allows you to twist the handle back ready for the next turn without actually withdrawing the screwdriver head. Quite an excellent idea and certainly a labour saving device.

#### **Have a Table Vice**

A good many workers bemoan the fact that they have no bench vice with which to hold their work. This tool is really one of the essentials of the home worker, and everyone who can afford it or has the opportunity, should purchase one of Hobbies benches to use.

Even if you cannot do this, you still have the opportunity of having a handy little vice in your own home by means of the woodworker's bench vice obtainable for 2/6. This is illustrated here and can easily be affixed to the kitchen table by means of the two screws provided.

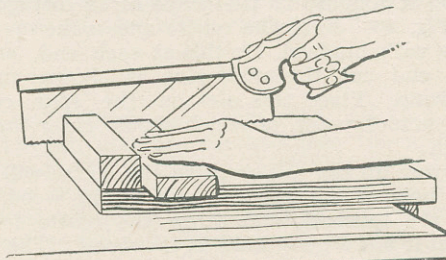
In fixing, you first unscrew the two handles,

then take the back plate with its two holes and screw this on to the side of the table or bench so that its upper edge is flush with the surface.

Now you will have to drill a hole through the side of the table to allow the threads of the vice itself to pass through. You must have a bit of 1in. diam. for this, and it should be possible to borrow one from a carpenter or a Carpentry Centre just for the two holes required.

#### **Easily Taken Down**

If you are not allowed to keep the vice fixed to the side of the table, it can be unscrewed after use.



*The bench hook or sawing board in use*

If, moreover, the top of the table overlaps the support rails underneath, you can easily glue a solid block of wood under the top to fill out the space, and to allow the vice to be screwed on to it.

Now a little note about sawing, which arose from a reader's letter the other day. Apparently complaints had been made of the kitchen table being cut about when the ordinary tenon saw was used on some stripwood. Quite right too.

If you attempt to saw wood on the plain surface of the bench, obviously the teeth will jump through at the last stroke and tear into the surface of the table or bench beneath.

#### **A Home-made Bench Hook**

What you want, indeed, what every worker should have, is a bench hook. This is quite a simple little tool, as shown in the illustration herewith.

It can be made from a single piece of wood fairly thick, to each end of which is added a stop. This stop is cut short off the edge of the wood so that when the part to be sawn is laid on, the blade of the saw passes beyond it, whilst the wood itself is held firmly in place.

You might say that you do very little actual sawing, and that it is not worth buying one of these. Here again it is rather false economy because if you are sawing parts, then smash or tear or spoil two or three pieces, the cost of these will soon be repaid by the saving on the bench hook.

Or why not make one for yourself? The size, of course, depends on the type of work you are undertaking. If you are dealing with stripwood, then a bench hook 6ins. wide and 8 ins. from back to front, with 1in. square stops should be sufficient.

By the way, the stops themselves must be glued and screwed securely because there is a good deal of pressure against them when you are actually sawing.



# LESSONS in WOODTURNING

## (2) How to commence cutting

**A**ND now for the first lesson in actual turning. Take a piece of wood some 6 ins. long by 1½ ins. square, plane off the corners to bring it roughly to the shape of an octagon as in Fig. 10. Find the centre and make a small hole with bradawl. Do this at each end, and at one end cut the small slot as shown in the drawing. Place this slot on the spur centre, the actual point of which should enter the hole made.

Bring up the tail stock so the centre will enter the hole at the opposite end of the wood, then fix the tailstock and screw the centre forward until it has a good hold in the wood. The latter should now revolve freely on the treadle being worked, and it is a good plan to treadle the lathe for a time before applying the tool to the wood.

### Master the Treadling

This is to be able to treadle with certainty that the wood will revolve in one way only instead of doing what it has the tendency to do, oscillate forward and backwards.

Having attained a certain amount of confidence in working the treadle, the tools may be brought into action. Bring the rest up to the wood as close as possible so it does not touch when the latter revolves. Set the top of the rest slightly above the centres, then place the gouge on the rest as at S. Fig. 11, and gently press the cutting edge into the wood.

### Making a Cylinder

It now takes a cut all round, and then sliding the tool along the rest, cutting all the way, the wood will take the form of a more or less even cylinder, but with a very rough surface.

This latter will be removed with the widest chisel, used in the position shown at T, Fig. 11, and passed along the wood so the middle only cuts. If the corners are allowed to come into

action they (especially the longer one) will dig into and spoil the work. The position of the gouge and chisel in cutting are shown in Figs. 12 and 13 respectively, and if used in these positions they will be found to do their work satisfactorily, subject of course, to the correct manipulation from the handle end.

The turning of a straight parallel cylinder is good practice, and may well be persevered in for a time. Even to the extent of a spoiled piece of wood or two.

### The Next Step

When a perfect cylinder is arrived at, the practice may be carried further by first setting off the series of lines as in Fig. 14. Then turn it into the shape shown in Fig. 15, in which the lower side shows the "roughing out," and the upper side the finished pattern.

To take the right hand end first, with the small chisel, held as at U, Fig. 16, make a cut round at each mark representing the quirks of the bead to be turned. Then, with the cutting-off tool held perfectly square with the wood, turn the two quirks as shown. These should be turned to the finished depth so they will not have to be touched after; this depth being measured and regulated by means of the calipers.

The corners can next be turned off as dotted lines, and lastly the bead shaped with the wide chisel. Use this first from the middle to the left and then from the middle to the right.

### Cut—Not Scrape

There is a strong temptation when turning such members as the bead in question, to lay the chisel flat on the rest and use it with a scraping action. This is not turning, and must not be done. The chisel is a cutting tool and must be used as such. After a very little practice, the learner will be surprised to find it so easy to do.

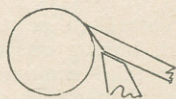


Fig. 12

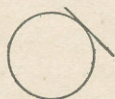


Fig. 13

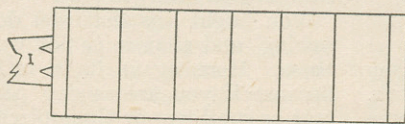


Fig. 14

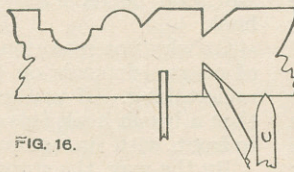


Fig. 16.

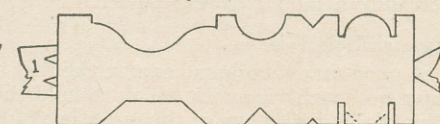


FIG. 15.



FIG. 17.

Fig. 12—Sectional detail showing gouge, rest and wood  
Fig. 13—Angle of chisel on wood  
Fig. 14—Wood in lathe, set out for shaping

Fig. 15—Wood roughed out (bottom) and finished to shape (top)  
Fig. 16—Tools in position in cutting quirks, etc.  
Fig. 17—Progressive lesson in shaping



The bead finished, start on the hollow, which is simply a bead reversed. It may be made with gouge only, but the novice will be well advised to cut out the vee with the chisel, as on the lower side of the drawing.

Here again the vee should be cut to the exact depth of the hollow, so the one will form a guide in making the other. In making the vee cuts the chisel should be used from either way as at V, Fig. 11, and in turning the hollow the gouge should be held sideways as at W, gradually bringing it on to its back as the bottom of the hollow is reached.

#### Forming a Hollow

Here again will come the temptation to use the gouge with a scraping action, but this must be resisted if good work is eventually to be done.

The remaining feature in Fig. 15, in which the two rounds merge into a hollow, will be done in the same way. First roughing out to the correct

depth as shown, and then making the hollow first, merging the two rounds into it. First the left then the right, thus getting practice in the use of the tools both right and left handed.

After the first lesson is finished, make another like it. This is one of the first necessities of wood turning, to be able to turn two or more articles to pattern. It is easy to do the first, but it is the matching the one with the other which is difficult.

In Fig. 17 we give a final lesson for practice, embodying as it does rounds and hollows, curves and vees, not to mention sharp corners. It is a good test of the progress of the novice, and if half a dozen are made so one cannot be told from the other, then he can fairly venture on actual work, and "make something."

We may mention here that in turning a number of articles to be all alike, the original should be used as the pattern throughout, otherwise the last will be far from like the first.

*(To be Continued)*

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## HINTS ON SOFT SOLDERING

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**S**OLDERING plays a very important part today both in the electric and motor business and in no less a way in the home. It is often said that it is the most difficult operation to get good results, though simple soldering for the home is quite easy. Today quite a good set of soldering materials can be obtained at a very cheap price and would-be solderers should consult Hobbies Handbook.

First, and the most important of all soldering is cleanliness; without it you never will succeed. It is ridiculous to rub the end of the copper-bit

as it is called, with a greasy cloth, for fatty substances will not blend with solder.

A good solder should be two parts tin and one of lead, though this varies on the materials to be soldered. For ordinary template work, spirits of salts is the best flux, though there are some excellent substitutes such as Fluxite, which is suitable in every way for home soldering.

All copper bits or soldering irons before they are ready

for service must be tinned on the end, to carry or pick up the solder. Tinning makes a relationship between the copper and the tin to be soldered and when tinned the end should be like silver.

Another great factor in soldering is heating the bit to the proper heat required. Never let your bit get red hot for if you do you will never succeed. Whether you use gas or electricity for heating purposes, the soldering bit is hot enough when it emits a green flame.

#### Tinning

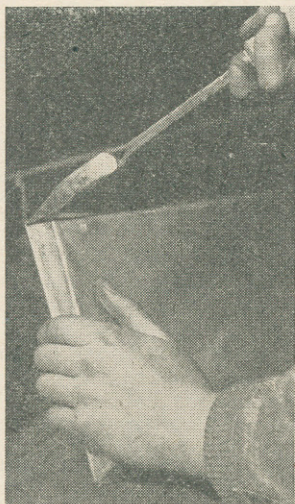
For tinning, take a piece of ordinary tin and smear on a little Fluxite, also a small spherical ball of solder by gently rubbing the surface will get that silvery appearance before-mentioned.

Do not put your stick of solder on the tin-plate you are tinning on or any other tin, place it in the frog of a brick until you want it.

Have everything ready, and do not have to walk far with the soldering iron, for although copper retains heat for a long period when withdrawn from the flame of whatever kind, it soon loses that degree of heat over and above the heat necessary to secure a good connection.

Another important point to remember is that where you place the flux the solder will run. Therefore, concentrate on the joint you are making. You can easily see when the solder is set, for you can watch it dry off when the connection is made.

For old pieces of work to be connected, all must be clean, or when you start you will be terribly disappointed. But do not blame the soldering iron or the flux, you hold the whip hand and success or otherwise depends on you.



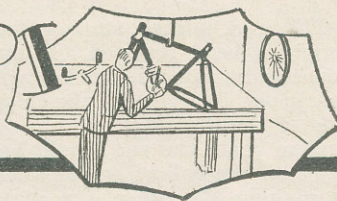
How to solder a metal tray corner





# HINTS & TIPS

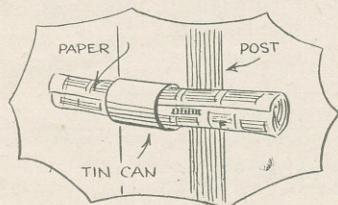
## WORTH KNOWING



For original Tips published the sender will receive a Hobbies Handy Propelling Pencil. We cannot acknowledge all those received, or guarantee to print them. Send to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add sketches if necessary.

### A Paper Holder

NEWSPAPER delivery boys usually throw the morning papers in the porch, where they are damaged by bad weather. Within a few minutes you can make a very suitable paper holder. Cut the top and bottom from a



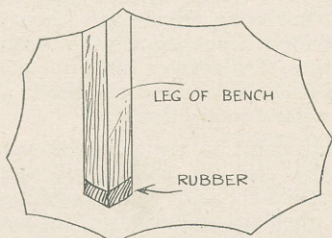
medium sized tin can, using a can opener. Fasten the tin can to a convenient place near the entrance by two small tacks driven into the wood from the inside of the can. This is easy if the holes are made near the edge. Apply a coat of enamel and the job is done.—(K.C.)

### Brakes in Wet Weather

TO make your brakes act in wet weather, run a little way with the brakes lightly on then release and they should work perfectly.—(K.H.)

### Deadening Noise

A USEFUL hint which I have discovered in connection with hammering and filing in the workroom which may cause annoyance to the next-door neighbours. The noise is remedied by



attaching a piece of rubber lin. thick, as sketch, under the bench legs as this will prevent all noises penetrating through the floor. Parts of an old motor tyre in several thicknesses will serve quite well.—(T.O.)

### Cycle Tip

THE following is a tip for replacing ball-bearings in the hub or pedal of a bicycle. Place some grease (butter or vaseline) into the cones of the axle bearing, the ball-bearings can then be pressed into the grease and will remain in position while adjusting same.—(L.F.)

### Sticky Valve

WHEN you are mending a puncture, your valve often sticks into the receiver on the tube. If you warm the valve with a match and pull at the same time it comes out easily.

### SOLUTION TO OUR SOCCER CROSSWORD in last week's issue

A	R	S	E	N	A	L	N	E	T
R	W	O	I	R	E	I			
D	R	I	B	B	L	E	M	O	B
S	F	A	O	N	E	I			
	S	T	R	A	N	G	S	E	A
I	O	G	A	D	T	I	E		
G	A	T	E	O	D	E	S		
N	R	I		N	R	A	S		
O	F	L	A	M	B	L	E		
R	E	F	O	W	B	O	Y		
E		C	U	P	S	A	G	E	

### Door Stop

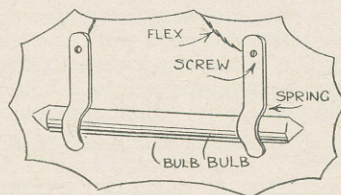
HERE is a good tip how to make a door-stop. If the knob of the door is inclined to cause a mark on the wall of the room, make a doorstep out of a cotton-reel. Fix it about 6ins. from the wall by means of a 2½in. screw. If desired it can be painted or stained to match the floor.—(F.F.)

### Bicycle Varnish

A GOOD varnish for bicycles can be made by dissolving old celluloid articles with amyl acetate—obtainable at chemists. This varnish prevents rust and a single coat will last a long time. It should be applied in a warm room, and the solution kept in a well stoppered bottle.—(S.C.)

### Tubular Bulb Holder

IF you are short of a proper holder for a tubular bulb, get two pieces of old clock spring. Bend slightly at one end and



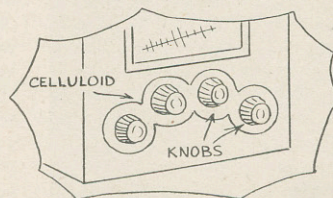
drill a hole at the other and you will find these quite neat and effective. Of course, the spring from a grid leak will also act as an efficient holder.—(R.E.H.)

### Stud Box Addition

MOST stud boxes are divided into compartments, but it is usually rather difficult to get them out of the compartment. To overcome this, cut a piece of thin wood or cardboard so it just fits into the compartment. To one end of it stick a piece of ribbon long enough to reach the top of the box when the piece of wood is in the bottom. Hinge the other end to the end of the compartment and the bottom of the box with a piece of adhesive tape. When the studs are in, lift flap and easily remove them.—(R.H.A.)

### Prevents Marking

TO save marking the polish round the knobs on a wireless set when tuning in, fit a round piece of clean celluloid under each knob with a little tack. If two



knobs come close together make one piece do under both. Mark out size and shape first with piece of paper. Cutting celluloid, or similar composition with fretsaw.



# The EDITOR'S NOTES



**T**HIS week, on the opposite page in fact, you will find the solution for the Cross Word Puzzle we gave last week. I have no doubt many of you were able to solve it comparatively easily, and in any case it would provide a little mental recreation for a short while. These Cross Words are really good fun and are as popular as ever. I am having them regularly now and another will appear next week, with the solution in the following issue. Although it will be a Stamp Collector's Puzzle, it will only contain everyday words which are known to all. So be sure not to miss it.

**A**NOTHER interesting new feature in next week's number will be some notes on Gardening. My recent Note brought forth so many requests for useful information that I have decided to commence a series immediately. The Notes are by an expert and will cover all sides of gardening, in a concise and practical manner. Each month's work will be dealt with as it comes along, and I am sure my expert will be pleased to help you in any little personal difficulties you may have.

**I**HAVE already mentioned a Hobbies Exhibition being held at Warrington on March 17th, 18th and 19th, and I know of many readers who have sent or are sending some of their work along. Now I hear that the original hall engaged was too small and a new venue has had to be found. The exhibition is now to be held in the Drill Hall, Bath Street, which is about three times as large as the Pattern Hall. Applications for entry forms should be made to Mr. F. Simcock, Cartref, Belmont Crescent, Great Sankey, Warrington, who is in charge of this section.

**T**HE result of last month's Scout Competition was not through early enough to include in this month's notes last week, but, here it is. There was a large number of entries, and the greater proportion of readers solved the words correctly. In consequence the awards had to be made for neatness, and the 1st prize went to

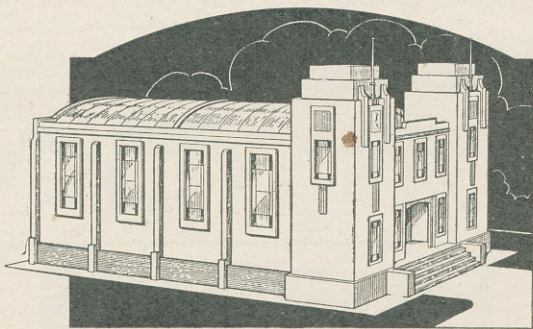
George Farrimond of St. Helens, Lancs. Two additional prizes were also sent to Pat Wilson of Surrey Street, Norwich, and John Graham of Harbottle, Morpeth.

**T**HE question whether a worker should specialise on one particular side of his hobby is always a debatable point. Is it best, for instance, to make only model galleons, or keep to clocks, or to undertake only electrical oddments and novelties? There is, I find, a great tendency this way amongst workers, as was revealed recently by readers who wrote in asking to go on my "Workers" register. Most of them were mainly interested in one particular class or type of work, and few offered themselves as "all-round" workmen in the fretsaw sense of the word.

**W**HICH in some ways seems to me to be a pity. I grant that by devoting yourself entirely to one branch you become more adept and quicker, but offset against that is the fact that you are a "one-way" man. Further, by constantly doing one job, or one type of job, you are quite apt to become a little tired of the monotony of it, and so subconsciously loose interest.

**S**OME of our readers would like to see nothing but inlaid designs every week for instance, whilst others would love to have clocks, or toys, or electrical novelties. But if we have only this one particular sort, how deadly dull it would become even for the most enthusiastic. A change is as good as a rest, some worthy person has remarked, so do not let us get so engrossed in one type or style that we tire ourselves of it without really knowing why.

## MODEL STATION TERMINUS DESIGN Free Next Week



**W**HAT about this station for any fellow with an ordinary model railway? Complete with platforms and imitation glass roof. Don't miss the full size pattern sheet given with next week's issue. Even if you do not want to make it now, you are sure to later on. So make sure of having the design at hand.

The Editor



# MISCELLANEOUS ADVERTISEMENTS

The advertisements are inserted at the rate of 2d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Order and Stamps must accompany the order. They will be inserted in the earliest issue. To sell anything except fretwork goods or those shown in Hobbies Handbook. Orders can be sent either to Hobbies Weekly, Advertisement Dept. 30/32 Ludgate Hill, London, E.C.4, or Dereham, Norfolk.

**BRAND** New Cabinet Maker's 4in. Precision Planning Machines, £4. Motorised, £7. Electric Motors; Paint Spray Plants; Drilling Machines, etc.—John H. Steel, Bingley.

**L**ONELY? Then write Secy., U.C.C., 16BB. Cambridge Street, London, S.W.1. Genuine. Established 1905.

**I**NVENTIONS PROTECTED. Booklets gratis.—Reginald W. Barker & Co., Patent Agents, 56 Ludgate Hill, E.C.4.

**G**LUE. Hobbies glue is as good as 25 years' experience can make it. Sticks wood, china, leather, etc. In tubes 6d. and 2d.—Hobbies Ltd., Dereham.

**A**MAZING OFFER of Persia Coronation Stamp Cat. 7/6 for only 6d. to applicants for my fine All Pictorials Approvals. Series A. 1d. and 1d. each. Series B. 1d. to 3d. each. Every one a Picture Stamp. List of Bargain Packets post free.—Court, 76 Willowdale Road, Liverpool, 9.

**100** Different Stamps Free if sheets asked. Includes Sierra Leone value 1/- Net. Jubilee Canada. Coronation Canada. New Zealand Coronation. Clearing Sale prices. Agents get extra gifts.—M. McAuslan, Stepps, Glasgow.

**C**HEAP Approvals. 50 Free. Stamps Bought.—Burley, 21 Jardine Rd., Aston, Birmingham.

**W**HY NOT TREAT YOURSELF to a fretmachine? It will double your output in half the time. Prices from 30/- cash or easy payments.—Hobbies Ltd., Dereham.

**1-HORSEPOWER** Petrolmotor Castings. Part machined, 2 9/9 Set. Instructive. Interesting. Catalogue 3d.—Butler's Aero Works, Wade Street, Littleover, Derby.

**L**ATHE AND FRETSAW 95/- carriage forward—Treadle-driven and just the thing for the home handyman. Write for details.—Hobbies Ltd., Dereham.

**A**MATEUR ENTERTAINERS, Concert Parties. Comedy and burlesque sketches, Crosspatter Turns, Ventriloquists' Dialogues. Send for list.—Finn, Author, Magdalen Street, Colchester.

**T**HE WORLD'S MOST POPULAR FRETWORK SET—Hobbies A1, price 10/6; post 9d. Other sets from 1/6 to 21/-. Send for list.—Hobbies Ltd., Dereham.

**56** STAMPS FREE including Set of Persian Shahs to approval applicants sending 2d. postage.—E. Tattersall, 65 North Eastern Road, Thorne, Doncaster.

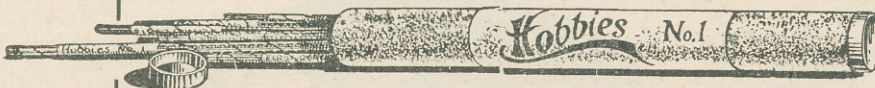
**M**OVIES AT HOME. How to make your own Cinema Projector. Particulars free.—Moviescope (H), Pear Tree Green, Dodinghurst, Essex.

**P**OLISH OUTFIT 2/3; post 6d. Comprises three kinds, of stain crystals, woodfiller, cotton-wool rubber, bottle of Hobbies "Lightning" polish, glasspaper and instructions.—Hobbies Ltd., Dereham.

**S**TAMP (Catalogue value 2/6) and fifty others absolutely free to genuine applicants for approvals sending 1½d. postage.—Fawcett, Dept. BB, 36 Flaxley Road, Selby.

## FRETSAWS CHEAPER !

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# HOBBIES SALE



# STAMP COLLECTOR'S CORNER

## WATERFALLS ON STAMPS

ON Thursday, January 27th, the famous Falls View Bridge at Niagara Falls collapsed. This is the bridge which was one of the first links between Canada and the United States of America over the famous gorge, and one of the most generally used.

The steel structure 1,000ft. high gave way under the pressure of one of the worst ice-jams in the history of Niagara. A day or so previously the concrete wall gave way and engineers worked heroically in an effort to save the bridge which had stood since 1890.

This bridge is shown on the

above the fall, it is only about thirty yards wide in the channel through which the water is forced, and the enormous pressure creates a perpetual mist. The same Falls are seen on several stamps of Southern Rhodesia.

One might almost say that all views in which water appears are picturesque, and consequently it is not surprising that waterfalls, the most beautiful of the various views, should appear on stamps.

That is really the explanation of why we now have to quote some examples without giving lengthy explanations of why these particular falls appear. Frequently they are only local beauty spots which through their beauty have a commercial value to towns and villages close to them.

The Llandoverly Falls which are shown on the 1d. value of Jamaica 1900 are a case in point. There is, however, some added philatelic interest, in that this stamp appears in two colours and readers should have both. One is red, the other is black and red.

There is a tendency to neglect to look at stamps which are similar when duplicates are about. So see which you have and try to get the other, if you have not noted this difference already.

The National Parks set of U.S.A. have two examples of waterfalls. The 1 cent has the Vernal Falls and the 2 cent which shows the Grand Canyon, shows the result of falls. The 3 cent, Dedication of Boulder Dam shows the way in which falling water is utilised and is a stamp which should be included in a "Waterfall" collection.

Switzerland in 1934 issued a set of seven view stamps and two of these views are of waterfalls—the Staubbach Falls and the Rhine Falls at Schaffhausen. The river is one hundred yards wide and the falls are sixty feet high with rapids below. The falls supply hydro electric power.

Newfoundland, in 1928, showed the Grand Falls of Labrador on the thirty cents stamp. These

Falls, with some more about fifteen miles lower down on the same river, have been harnessed to provide the power for paper mills.

Notice that the falls are in Labrador, for although this tract of country is on the mainland, yet it does not belong to the Dominion of Canada but to Newfoundland.

There are two very pretty waterfalls shown on the stamps of Tasmania and St. Lucia, but the very striking difference is the reason for mentioning them.

The Russel Falls on the Tasmanian fourpenny of 1899 are shown in one colour—buff—and the result is that you have to look carefully to discover the beauty. If this stamp is compared with the 1½d. of the 1936 issue of St. Lucia, which shows the Ventine Falls printed in black and scarlet, then one can see immediately the effectiveness of the latter printing.

Strictly speaking, these latter are not waterfalls but boiling sulphur springs.

Lastly we show a picture of one of the highest waterfalls in the World. Those are the Kaieteur Falls in British Guiana. They are shown on the 2c. and 10c. of the 1898 issue; also on the 4c. and \$1 of the 1931 issue and again on the 4c. and 50c. of the 1934 issue.

The design of the last issue is the same as the 1934, except that the date has been left out. The falls on the river Potaro are approximately 750ft. high, with a further 80ft. over a cataract.



*The late Falls View Bridge*

*The Victoria Falls*

1898 issue of the United States, one of the set of seven stamps to commemorate the Pan American Exhibition held at Buffalo, and which is here illustrated.

The Niagara Falls figure on the 25c. value of the 1922 issue of U.S.A. and there is another view of them on the 20c. of the 1935 issue from Canada.

Another very spectacular fall is shown on the second illustration—the Victoria Falls. This stamp must certainly follow the illustration of the Niagara bridge because it was issued in 1905 to commemorate the visit of the British Association to Rhodesia and the opening of the Victoria Falls Bridge over the river Zambesi.

The river is about one mile wide at the top of the fall which is about 400ft. This is roughly twice the height of the Niagara, and some of the water has been harnessed so as to provide electricity for the Rand industries. The Falls were discovered by David Livingstone 1855.

One might almost say that the interest of the falls lies below, for although the river is a mile wide



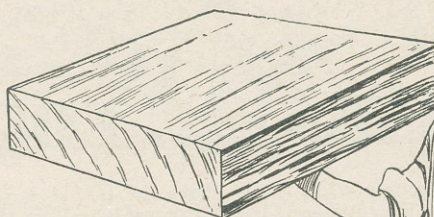
*Falls in Jamaica*

*The Kaieteur Falls*

This river is in a region with a very pronounced rainy season so that at times the volume of water is increased threefold. It is well worth making a note of these "Waterfall Stamps" and adding to them when you can.

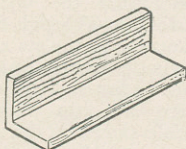


# BALSA WOOD

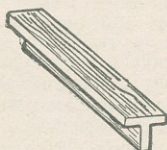


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### HEAD OFFICE AND WORKS:

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### EDITORIAL.

All Editorial matter should be sent to The Editor, Hobbies Weekly, Dereham, Norfolk. If enclosed with orders or other matter for Hobbies Ltd., it should be written on a separate sheet of paper. Any matter requiring an answer must have a stamped addressed envelope enclosed.

### DESIGN SHEETS.

The presentation Design Sheet is given only with current copies of Hobbies Weekly, and not with back numbers. The designs, however, can be obtained separately, from Hobbies Ltd., price 4d., post free, or 10d. in the case of double size sheets.

### ADVERTISEMENTS.

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### INDEXES AND BINDING CASES.

An Index for any volume is obtainable for 4d. post free, and Binding Cases to take a complete set of 26 issues (making the volume) are supplied for 1/6, or sent post free for 1/8. The Cases are in red linen with gold blocked name on the front. The Azabook Binder, to hold 24 copies which you can fix in yourself is 3/3 (3/6 post free) including two dozen fastening staples.

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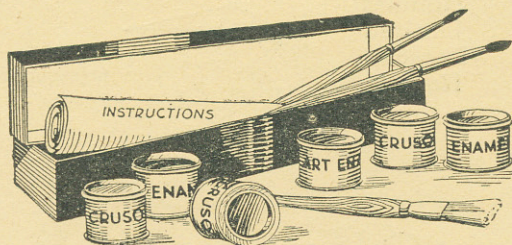
### CONTRIBUTIONS.

The Editor is always pleased to consider suitable articles for these pages, which, if accepted, will be paid for at the usual rates. While every effort will be made to return unsuitable contributions (if stamps for that purpose are sent with them), the Editor does not accept any responsibility for their loss.

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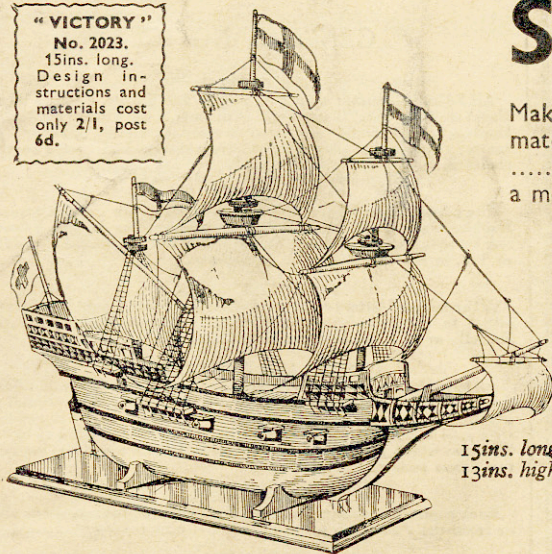
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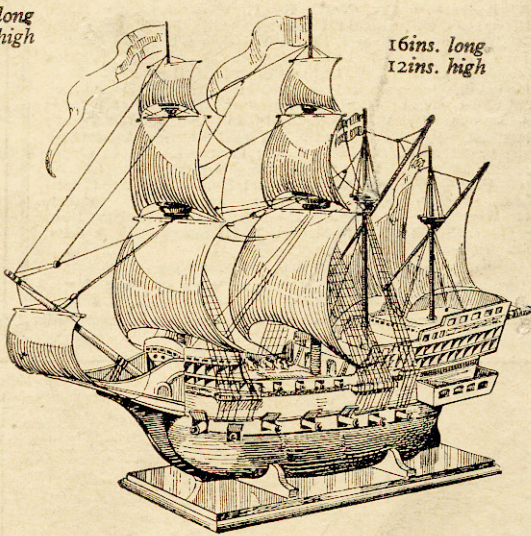
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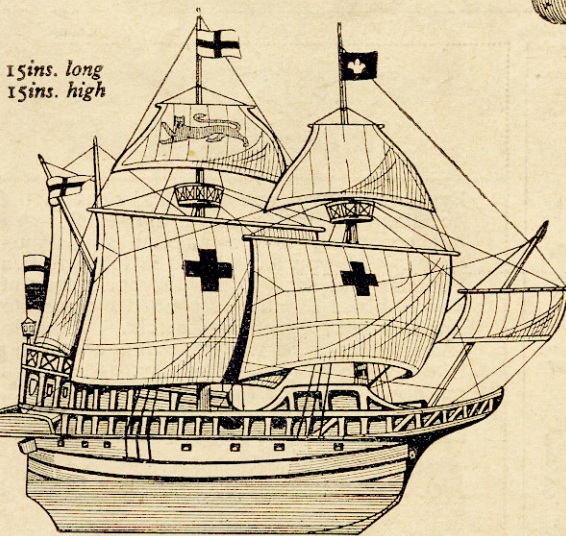
The complete parcel of design, instructions, wood, round rod for masts, waxed paper for sails, wire, special cord, 12 pulleys, eight wood guns, etc. costs 4/1 ; postage 6d.



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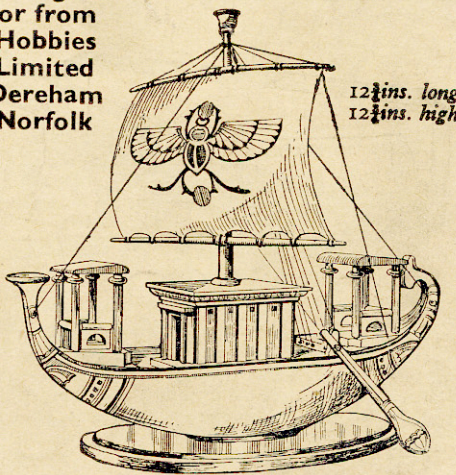
This model must be popular. We have sold thousands of designs and parcels of materials. The design, instructions, wood, turnings, round rod, six pulleys, ten wood guns, waxed paper for sails, etc. cost only 3/7 ; postage 6d:



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